

Attorney Docket No.  
COE-561

PATENT APPLICATION  
Serial No. 10/767,499

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended): A stay vane for use with a turbine configuration having  
5 components including a complementary component incorporating a leading edge and a  
trailing edge, said complementary component suitable for complementing operation of  
said stay vane, comprising:

a first structure, incorporating a leading edge and a trailing edge with respect to  
a fluid inlet to said turbine configuration,

10 wherein said first structure supports said turbine configuration at least in part; and

~~a second structure~~ an extension affixed to said trailing edge of said first  
structure,

wherein said ~~second structure~~ extension improves hydraulic performance of said turbine  
configuration by ~~complementing at least one said component of said turbine~~  
15 ~~configuration~~ reducing, but not sealing, the gap between said stay vane and said  
complementary component.

2. (Currently Amended): The stay vane of claim 1 further comprising at least one  
connector for affixing said ~~second structure~~ extension to said trailing edge of said first  
20 structure.

3. (Original): The stay vane of claim 2 in which said at least one connector is a bolt  
threadably connected to a tapped borehole provided in said first structure as at least one  
of said components of said turbine configuration.

4. (Original): The stay vane of claim 3 in which said borehole is countersunk and the  
portion above said bolt as installed is filled with a sealant selected from the group  
consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination  
thereof.

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5. (Original): The stay vane of claim 2 in which said at least one connector is a bolt threadably connected to a threaded insert provided in a borehole in said first structure as at least one of said components of said turbine configuration.
- 5 6. (Original): The stay vane of claim 5 in which said borehole is countersunk and the portion above said bolt as installed is filled with a sealant selected from the group consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination thereof.
- 10 7. (Currently Amended): The stay vane of claim 1 in which said ~~second-structure~~ extension is affixed to said trailing edge of said first structure by any of a means selected from the group consisting essentially of: welding, soldering, mechanically bonding, chemically bonding, and combinations thereof.
- 15 8. (Currently Amended): The stay vane of claim 1 in which said ~~at least one~~ complemented complementary component is ~~at least one~~ a wicket gate, incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration.
- 20 9. (Currently Amended): The stay vane of claim 8 in which said ~~second-structure~~ extension is permitted to touch said ~~at least one~~ wicket gate in the region of said leading edge of said wicket gate, thereby eliminating the gap between said second structure and said wicket gate in at least one position of said wicket gate.
- 25 10. (Currently Amended): The stay vane of claim 9 in which said ~~second-structure~~ extension is also affixed to said leading edge of said ~~at least one~~ wicket gate.
- 30 11. (Currently Amended): The stay vane of claim 9 in which said ~~second-structure~~ extension is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable

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material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

12. (Currently Amended): The stay vane of claim 10 in which said ~~second structure~~  
5 extension is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

10 13. (Currently Amended): A hydraulic turbine configuration having components, including at least one wicket gate, at least one stay vane and at least one turbine runner, said stay vane comprising:

a first structure, incorporating a leading edge and a trailing edge with respect to a water inlet to said hydraulic turbine configuration,

15 wherein said first structure supports said turbine configuration at least in part; and

a second structure affixed to said trailing edge of said first structure,

wherein said second structure improves hydraulic performance of said turbine configuration by ~~complementing at least one said component of said turbine configuration~~ reducing, but not sealing, the gap between said stay vane and said wicket gate.  
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14. (Original): The hydraulic turbine configuration of claim 13 further comprising at least one connector for affixing said second structure to said trailing edge of said first structure.  
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15. (Original): The hydraulic turbine configuration of claim 14 in which said at least one connector is a bolt threadably connected to a tapped borehole provided in said first structure as at least one of said components of said turbine configuration.

30 16. (Original): The hydraulic turbine configuration of claim 15 in which said borehole is countersunk and the portion above said bolt as installed is filled with a sealant selected

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from the group consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination thereof.

5 17. (Original): The hydraulic turbine configuration of claim 15 in which said at least one connector is a bolt threadably connected to a threaded insert provided in a borehole in said first structure as at least one of said components of said turbine configuration.

10 18. (Original): The hydraulic turbine configuration of claim 17 in which said borehole is countersunk and the portion above said bolt as installed is filled with a sealant selected from the group consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination thereof.

15 19. (Original): The hydraulic turbine configuration of claim 13 in which said second structure is affixed to said first structure by any method selected from the group consisting of: welding, soldering, mechanically bonding, chemically bonding, and combinations thereof.

20 20. (Canceled): ~~The hydraulic turbine configuration of claim 13 in which said at least one complemented component is at least one said wicket gate, incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration, and at least one said turbine runner,~~  
~~wherein said at least one wicket gate is complemented by employing said second structure to reduce the width of any gap between said trailing edge of said stay vane as installed and said wicket gate as installed, to include eliminating said gap.~~

25 21. (Currently Amended): The hydraulic turbine configuration of claim ~~20~~ 13 in which said second structure touches said at least one wicket gate in the region of said leading edge of said wicket gate, thereby eliminating said gap between said second structure and said wicket gate in at least one position of said wicket gate.

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22. (Original): The hydraulic turbine configuration of claim 21 in which said second structure is also affixed to said leading edge of said at least one wicket gate.

23. (Original): The hydraulic turbine configuration of claim 21 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

24. (Original): The hydraulic turbine configuration of claim 22 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

25. (Currently Amended): An extension incorporated in a turbine configuration having components to include a first structure supporting said turbine configuration at least in part, said first structure incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration, and at least a complementary component to said first structure, said extension comprising:

a second structure affixed to said trailing edge of said first structure, wherein said extension improves hydraulic performance of said turbine configuration by complementing at least one said component of said turbine configuration reducing, but not sealing, the gap between said first structure and said complementary component.

26. (Original): The extension of claim 25 further comprising at least one connector for affixing said second structure to said trailing edge of said first structure.

27. (Original): The extension of claim 26 in which said at least one connector is a bolt threadably connected to a tapped borehole provided in said first structure as at least one of said components of said turbine configuration.

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28. (Original): The extension of claim 27 in which said borehole is countersunk and the portion above said bolt as installed is filled with a sealant selected from the group consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination thereof.
29. (Original): The extension of claim 25 in which said second structure is affixed to said first structure by any method selected from the group consisting of: welding, soldering, mechanically bonding, chemically bonding, and combinations thereof.
30. (Currently Amended): The extension of claim ~~25~~ 26 in which said at least one connector is a bolt threadably connected to a threaded insert provided in a borehole in said first structure as at least one of said components of said turbine configuration.
31. (Original): The extension of claim 30 in which said borehole is countersunk and the portion above said bolt as installed is filled with a sealant selected from the group consisting of: an auto body filler, an RTV sealant, an epoxy, and any combination thereof.
32. (Currently Amended): The extension of claim 25 in which said ~~at least one~~ ~~complemented~~ complementary component is at least one wicket gate incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration.
33. (Currently Amended): The extension of claim ~~25~~ 32 in which said second structure touches said at least one wicket gate in the region of said leading edge of said wicket gate in at least one position of said wicket gate relative to said stay vane, thereby eliminating said gap between said second structure and said wicket gate at said at least one position.

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34. (Original): The extension of claim 33 in which said second structure is also affixed to said leading edge of said at least one wicket gate.

5 35. (Original): The extension of claim 33 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

10 36. (Original): The extension of claim 34 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

15 37. (Currently Amended): A method of improving operation of a turbine configuration at least incorporating stay vanes having a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration, wicket gates, and turbine runners, said method also having potential for reducing casualties among fauna passing through said turbine configuration, comprising:

20 designing an extension for said stay vanes that hydraulically complements at least said wicket gates; and

affixing said extension to said stay vanes,

25 wherein said extension reduces the width of any gap between a trailing edge of each said stay vane and a leading edge of a corresponding said wicket gate ~~of said stay vane~~.

38. (Previously Presented): The method of claim 37 providing for said extension to touch said wicket gate corresponding to said stay vane when said wicket gate is fully open.

30 39. (Original): The method of claim 37 further comprising affixing said extension to said wicket gate corresponding to said stay vane.

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40. (Original): The method of claim 37 further designing said extension to complement said turbine runners.
- 5 41. (Original): The method of claim 37 providing for said extension to reduce the width of said gap between said stay vanes and said wicket gates by an amount from about 25–100% of said gap before installation of said extension.
- 10 42. (Original): A wicket gate for use with a turbine configuration, said turbine configuration having components, including at least one complemented component, comprising:  
a first structure, incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration,  
wherein said first structure pivots about an axis to control water flow through said turbine; and  
15 a second structure affixed to said leading edge of said first structure,  
wherein said second structure improves hydraulic performance of said turbine configuration by complementing at least one said component of said turbine configuration.
- 20 43. (Original): The wicket gate of claim 42 in which said second structure is affixed to said leading edge of said first structure in a manner selected from the group consisting essentially of: welding, soldering, mechanically bonding, chemically bonding, and combinations thereof.
- 25 44. (Original): The wicket gate of claim 42 in which said at least one complemented component is at least one stay vane, incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration.
- 30 45. (Previously Presented): The wicket gate of claim 44 in which said second structure is permitted to touch said at least one stay vane in at least one position of said at least one

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wicket gate relative to said stay vane, thereby eliminating the gap between said second structure and said stay vane.

5 46. (Original): The wicket gate of claim 45 in which said second structure is also affixed to said trailing edge of said at least one stay vane.

10 47. (Original): The wicket gate of claim 45 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

15 48. (Original): The wicket gate of claim 46 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

20 49. (Original): An extension incorporated in a turbine configuration having components to include a first structure supporting said turbine configuration at least in part, said first structure incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration, said extension comprising:

25 a second structure affixed to said leading edge of said first structure, wherein said extension improves hydraulic performance of said turbine configuration by complementing at least one said components of said turbine configuration.

30 50. (Original): The extension of claim 49 in which said second structure is affixed to said first structure by any method selected from the group consisting of: welding, soldering, mechanically bonding, chemically bonding, and combinations thereof.

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51. (Original): The extension of claim 49 in which said at least one complemented component is at least one stay vane incorporating a leading edge and a trailing edge with respect to a fluid inlet to said turbine configuration.

5 52. (Original): The extension of claim 49 in which said second structure touches said at least one stay vane in at least one position of said wicket gate relative to said stay vane in the region of said trailing edge of said stay vane, thereby eliminating said gap between said second structure and said stay vane.

10 53. (Original): The extension of claim 49 in which said second structure is fabricated from a material selected from the group consisting of: a durable elastic material, a durable flexible material, a durable pliable material, a durable material formed in a telescoping arrangement, a durable material formed in an accordion arrangement, and any combination thereof.

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